GW25-e4151

Timing selection of delayed percutaneous coronary intervention in ST-segment elevation of myocardial infarction

Zheng Wen[1,2], Yu Cheuk Man[3], Sun Jian[1], Jing Liu[2], Zhao Dong[2]
[1]Department of Cardiology, the First Hospital of Jilin University, Changchun, China, [2]Department of Epidemiology, Beijing Anzhen Hospital, Capital Medical University, Beijing Institute of Heart, Lung and Blood Vessel Diseases, China, [3]Prince of Wales Hospital, Institute of Vascular Medicine, the Chinese University of Hong Kong, Hong Kong

Objectives: At present, a considerable portion of STEMI patients who missed early reperfusion received delayed percutaneous coronary intervention (PCI). However, timing selection of delayed PCI differs in clinical practice and is less well-established. So the present study described the current situation on timing selection of delayed PCI and evaluated whether it is associated with outcome benefits.
Methods: All STEMI patients who performed delayed PCI between the year 2007 and 2010 in Beijing, were identified from the Beijing Monitoring System for Cardiovascular Diseases, a system covering all hospital admissions and deaths from ischemic heart diseases in a population of 19.61 million. Patients with cardiogenic shock, New York Heart Association (NYHA) class III or IV heart failure, ventricular arrhythmias, cancer or renal failure were excluded. The primary outcome was major adverse cardiovascular events (MACEs) including cardiac death, recurrent MI and repeat revascularization within two years. A linear mixed effects model with a Poisson link function and hospital-specific random intercepts was fitted for calculating the adjusted incidence of each timing of delayed PCI and plotted with a quadratic regression curve.
Results: 5417 STEMI patients were enrolled with 2 years follow-up. Of these, 55.9%, 35.4% and 8.7% received delayed PCI, respectively, on Day 2 to 7, Day 8 to 14 and Day 15 to 28 from onset. At baseline, higher proportion of female, elderly (>75 years) in Day 15-28 group and hospitalized in tertiary services in Day 2-7 group was found. Duration from onset to performing PCI in tertiary hospitals was shorter than that in secondary hospitals (mean duration, 5.97 days vs 8.01 days, P<0.001), and there is a shortened trend through years. The 2-year cumulative MACEs rates were similar among three groups (10.3%, 8.8% and 9.6%; log-rank P=0.26). There was no significant association between the timing of delayed PCI and adjusted 2-year incidence of MACEs (P=0.24) but plotting as a 'U' shape, that is, lower incidence was observed in patients who received delayed PCI on one week later from onset.
Conclusions: Timing selection of delayed PCI differed in clinical practice and it was affected by age, gender and hospital levels. There was no significant association between the timing of delayed PCI and 2-year outcome benefits but maybe safer on one week later.

GW25-e4210

Research of self-management intervention on patients with chronic heart failure

Zhou Yingying, Zhang Dan, Li Jinan, Chen Yongchun, Yu Liyan
The First Hospital of Jilin University

Objectives: To investigate the effects of self-management intervention model on quality of life in chronic heart failure patients.
Methods: Choose the chronic heart failure patients with a total of 200 cases from June 2012 to May 2013 in our department, according to the date of admission sequence number, then press the odd, even were randomly divided into the control group and intervention group. Inclusion criteria as follows: (1) no cognitive dysfunction, (2) no damage to liver and kidney function and other serious complications; (3) aged from 40 to 60 years old; (4) suffering from heart failure more than one year; (5) informed consent of patients. Both of the two groups were given conventional health education and discharged instructions. In addition, the intervention group will be taught a series of self-management project and specifications, including emotional management, weight control, aerobic exercise, communication, nutrition management, cognitive symptom management. Given full play to the subjective initiative of patients. patient developed appropriate effective interventional plans together with the families based on the their own symptoms, Thus raising their Cognitive behavior, changing unhealthy eating habits, establish regular exercising behavior, encourage patients to actively participate in the management of their disease. They were regular follow-up, provided systematic, targeted guidance, tracking down after they were discharged.
Results: There was a significant differences, between the two group with the rates of re-hospitalization, medical costs. living habits, knowledge of heart failure, quality of life from the experimental group was significantly better than the control group, the differences were statistically significant (P<0.05).
Conclusions: Self-management intervention is of great significance for patients with chronic heart failure to improve their ability of disease management, which can intensify the effect of clinical care and treatment, reduce patient readmission rates and average length hospitalization, Enhance self-efficacy and the quality of life.

GW25-e4390

A Large-Sample Retrospective Study on Relationships between Cardiac Output Parameters and Sex, Age and Blood Pressure

Zhang Maozhen[1,2], Zhang Ligang[3], Zhang Wenli[4], Jonathan Ma[5]
[1]Xinhua Hospital Affiliated to Shanghai Jiao Tong University School of Medicine, Cardiology Department, [2]iKang Healthcare Group (Shanghai) Medical Affairs, [3]iKang Healthcare Group, [4]Chinese PLA General Hospital, Cardiology Department, [5]University of Columbia, Department of Statistics

Objectives: To analyze non-invasive cardiac function parameters among generally healthy subjects, to evaluate potential risk factors of cardiac function, to establish mathematical models to describe the relationships between cardiac function parameters and sex, age and blood pressure (BP), and to propose recommendations for early prevention of abnormal decline in cardiac function.
Methods: Between Jan 1 and Dec 31, 2013, a total of 14, 222 eligible subjects performed non-invasive cardiac function evaluation at 21 iKang Medical Centers across China. The population consists of 7, 748 (54.5%) males and 6, 474 (45%) females with average ages of 44.2±12.5 and 45.1±13.8, respectively. The cardiac function parameters were measured by Non-Invasive Cardio-Hemodynamic Monitors (CHM-3002, developed by Beijing Li Heng Medical Technologies Ltd., manufactured by Shandong Baolihao Medical Appliances Ltd.). The device is based on the TEB (Thoracic Electrical Bioimpedance) technology. The cardiac function parameters include SVI (Stroke Volume Index), CI (Cardiac Index), SV (Stroke Volume), CO (Cardiac Output) and TPR (Total Peripheral Resistance). Linear regression models were generated using SAS (version 9.3).
Results: BP appears to be positively correlated with age. Males have a higher average BP compared to that of females (P<0.05). The difference between two sexes is more prominent before age 45. After 45, the gap narrows as age increases. Cardiac output parameters appear to be negatively correlated with age, similarly for males and females. The regression models are: SVI=51.5+0.76*Sex-0.21*Age, CI=3.52 + 0.1*Sex - 0.018*Age, SV=91.9-9.8*Sex-0.35*Age, CO=6.25-0.56*Sex-0.029*Age, where Sex=1 for females and 0 otherwise, Sex and Age both P<0.05. These models imply that, compared to females of same age, males have higher average SV and CO (by roughly 10%) and slightly lower average SVI and CI (by roughly 2%); and after age 25, increase of 1 year in age is associated with roughly 0.4%-0.6% decrease in SVI, CI, SV and CO.

Cardiac output parameters appear to be negatively correlated with MAP. The most notable model is: SVI=64.3-0.36*Sex-0.16*Age. The model implies that the increase of 1 mmHg in MAP is associated with roughly 0.26% decrease in SVI, similar to increase of 1 year in age. TPR appears to be positively correlated with age. Before age 45, there is no notable difference between males and females. After age 45, the average TPR in females exceeds that of males, attributable to faster increase in BP in females.
Conclusions: To authors' knowledge, this is the first large-sample study to investigate the relationships between the non-invasive cardiac function parameters and sex, age and BP. The results coincide with traditional clinical knowledge. Moreover, the mathematical models provide quantitative tools and useful reference ranges for evaluating cardiac function and the risk factors. Recommendations are given for early prevention of cardiac function problems.

GW25-e4484

Associated risk factors of new onset hypertension in a cohort study among Beijing community residents

Wang Li[1], Zhang Chunfang[2], Lu Kai[1], Ding Rongjing[2], Hu Dayi[1,2], Yu Jinming[3]
[1]The first affiliated hospital of Chongqing medical university, [2]Peking university people's hospital, [3]School of Public Health, Fudan university

Objectives: The study was conducted to explore the incidence of new onset hypertension and its risk factors in a cohort study among community residents in Beijing and to provide some new ideas for hypertension' prevention strategies.
Methods: A population-based survey with a randomly cluster sampling was conducted in four communities of Beijing from June to August in 2007. A total of 10054 residents were included to receive site investigation with regarding to cardiovascular risks. Blood pressure, fast blood glucose, total cholesterol (TC), triglyceride (TG), low density lipoprotein (LDL), high-density lipoprotein (HDL), waist circumstance, weight and height were measured during the investigation, meanwhile recording the lifestyle habits, including smoking, alcohol, sleeping quality, working intensity, working category, working regularity and education level. From June to August in 2009, 7222 residents among the based study residents received the same investigation again. Hypertension was defined as a mean systolic blood pressure (SBP) ≥140 mmHg and/or diastolic blood pressure (DBP) ≥ 90 mmHg, and/or current use of antihypertensive medications. Prehypertension defined as a mean SBP120-139 mmHg and/or DBP ≥ 80-89 mmHg, without any antihypertensive therapy. BMI >24 kg/mm^2 defined as Overweight, obesity as BMI ≥28kg/mm^2. Associated risk factors of new onset hypertension were analyzed by Multivariate logistic regression.
Results: 4034 subjects had normal blood pressure at baseline and 978 of them (24.24%) had developed into hypertension two years later. Multiple logistic analysis demonstrated the associated risk factors that contributed to hypertension were prehypertension [OR=3.624 (95% CI 3.075-4.27)], age [OR=1.026 (95% CI 1.018-1.035)], high cholesterol [OR=1.164 (95% CI 1.015-1.326)], overweight [OR=1.749 (95% CI 1.314-2.206)], obesity [OR=2.413 (95% CI 1.927-3.026)], waist circumstance [OR=1.328 (95% CI 1.211-1.455)] and always-alcohol drinking [OR=1.507 (95% CI 1.205-1.884)], respectively. The protective factors of hypertension included BMI loss [OR=0.892 (95% CI 0.673-1.182)] and graduate or above education level [OR=0.629 (95% CI 0.445-0.891)].
Conclusions: The prevalence of new onset hypertension is high in Beijing community residents, while prehypertension, overweight or obesity, low education level and always-alcohol drinking are the most important risk factors for new onset hypertension. Therefore, we should pay more attention to these modifiable risk factors in reducing the incidence of hypertension.